WHAT IS CLAIMED IS:

1. A fluid heating device comprising a housing having an internal chamber, a fluid inlet and a fluid outlet disposed in said housing and in fluid communication with said internal chamber, a rotor mounted for rotation within said internal chamber about an axis of rotation, said housing having an intermediate portion positioned radially outwardly of said rotor and end portions positioned axially outwardly of opposite faces of said rotor, a drive shaft rotatably supported in said housing by a pair of bearings and extending into said internal chamber for imparting mechanical energy to said rotor, wherein each of said pair of bearings is disposed in a respective one of said end portions, a fluid seal disposed in said housing and residing in the end portion opposite said fluid inlet, said seal surrounding said drive shaft and said drive shaft extending past said seal and outwardly from said end portion for receiving power input,

said rotor comprising an outer surface confronting an inner surface of said intermediate portion and defining an annular fluid volume, said fluid inlet communicating with said annular fluid volume and situated nearer a distal end of said rotor and said fluid outlet communicating with said annular fluid volume and situated nearer the proximate end of said rotor,

said outer surface having a plurality of openings disposed on said outer surface, wherein rotation of said rotor causes said plurality of openings to impart heat-generating cavitation to a fluid entering said internal chamber, and wherein said fluid outlet is disposed in said intermediate portion.

2. The fluid heating device according to claim 1 wherein said fluid inlet overlies said axis of rotation.

3. The fluid heating device according to claim 1, and further comprising at least one inlet port disposed in said housing and wherein said fluid inlet is in communication with said internal chamber via said at least one inlet port, said at least one inlet port disposed radially closer to said axis of rotation than said fluid outlet.

4. The fluid heating device according to claim 3 wherein said at least one inlet port lies radially outwardly of one of said pair of bearings.

5. The fluid heating device according to claim 4 wherein said at least one port has its longitudinal axis disposed parallel to said axis of rotation.

6. The fluid heating device according to claim 1, and further comprising at least one inlet port in said drive shaft disposed radially inwardly of one of said pair of bearings and wherein said fluid inlet is in communication with said internal chamber via said at least one inlet port, said at least one inlet port disposed radially closer to said axis of rotation than said fluid outlet.

7. The fluid heating device according to claim 6 wherein said at least one inlet port has its longitudinal axis inclined with respect to said axis of rotation.

8. The fluid heating device according to claim 1, and further comprising at least one inlet port in said drive shaft and disposed radially inwardly of one of said pair of bearings to be radially closer to said axis of

rotation than said fluid outlet, and wherein said at least one inlet port has a longitudinal length exceeding the longitudinal length of said rotor.

9. The fluid heating device according to claim 1, and further comprising an internal circumferential fluid capturing groove disposed on said inner surface and positioned radially outwardly of said annular fluid volume and axially displaced from said openings, said fluid outlet disposed in said intermediate portion and positioned radially outwardly of said circumferential fluid capturing groove and fluidly communicating with said circumferential fluid capturing groove.

10. The fluid heating device according to claim 1, and further comprising an internal circumferential fluid capturing groove disposed on said outer surface and positioned radially inwardly of said annular fluid volume and axially displaced from said openings, said fluid outlet disposed in said intermediate portion and positioned radially outwardly of said circumferential fluid capturing groove and fluidly communicating with said circumferential fluid capturing groove.

11. The fluid heating device according to claim 1 wherein said intermediate portion comprises one housing element, and where respective said end portions comprise second and third housing elements.

12. The fluid heating device according to claim 1 wherein said intermediate portion comprises a cylindrical housing sleeve, and where respective end portions comprise rear and front housing covers, said rear and front housing covers each provided with a circular register and said housing

sleeve engaging respective registers and clamped between said rear and front housing covers by a plurality of bolts.

13. The fluid heating device according to claim 1 wherein said annular fluid volume provides a unidirectional pathway for fluid entering said internal chamber via said fluid inlet to reach said fluid outlet, and said plurality of openings are disposed in a plurality of circumferential rows spaced about said rotor along the longitudinal axis of said rotor.

14. The fluid heating device according to claim 13 wherein in at least one row of said openings are circumferentially spaced at uniform intervals.

15. The fluid heating device according to claim 13 wherein in at least one row of said openings are circumferentially spaced at variable intervals.

16. The fluid heating device according to claim 13 wherein at least one row of said openings are circumferentially displaced from any one other row of said openings.

17. The fluid heating device according to claim 13, wherein said rotor comprises a casting, and wherein at least a majority of said plurality of openings in said casting are aligned with respect to each other such that their longitudinal axes are disposed in parallel.

18. The fluid heating device according to claim 13 wherein at least some of said openings are formed as radial holes, the longitudinal axes of said radial holes intersecting said axis of rotation.

19. The fluid heating device according to claim 13 wherein at least some of said openings are formed as radial holes, the longitudinal axes of said radial holes offset from said axis of rotation.

20. The fluid heating device according to claim 13 wherein at least some of said openings are formed as blind radial holes, the longitudinal axes of said blind radial holes offset from said axis of rotation, and where the bottom-end of said blind radial holes lags behind the top-end of said radial holes in the direction of rotor travel.

21. The fluid heating device according to claim 13 wherein at least some of said openings are formed as radial holes and where said radial holes have a depth dimension extending the radius dimension of said rotor.

22. The fluid heating device according to claim 13 wherein at least some said openings are formed as radial holes, the depth of some of said radial holes extending in distance to a greater dimension than the radius dimension of said rotor and where said at least some said radial holes interconnect each other.

23. The fluid heating device according to claim 13 wherein at least some of said openings are formed as radial holes, the depth of at least some of said radial holes extending in distance to a greater dimension than the radius dimension of said rotor and where said at least some said radial holes interconnect each other forming a continuous pathway in said rotor for the transmission of shock waves.

24. A fluid heating device comprising a housing having an internal chamber, a fluid inlet and a fluid outlet disposed in said housing and in fluid communication with said main chamber, a rotor mounted for rotation within said internal chamber about an axis of rotation, said housing having a tubular portion radially outwardly said rotor and a respective end portion axially outwardly said rotor, a drive shaft rotatably supported in said housing by a pair of bearings and extending into said internal chamber for imparting mechanical energy to said rotor,

said rotor comprising an outer surface confronting an inner surface of said tubular portion and defining an annular fluid volume, said fluid inlet communicating with said annular fluid volume and situated nearer a distal end of said rotor and said fluid outlet communicating with said annular fluid volume and situated nearer the proximate end of said rotor,

said outer surface having a plurality of openings disposed on said outer surface and where at least a proportion of said openings are formed as radial holes, the longitudinal axes of said radial holes offset from said axis of rotation, wherein rotation of said rotor causes said plurality of openings to impart heat-generating cavitation to a fluid entering said internal chamber.

25. The fluid heating device according to claim 24 wherein said radial holes have a depth dimension extending the radius dimension of said rotor.

26. The fluid heating device according to claim 25 wherein said radial holes interconnect with each other.

27. The fluid heating device according to claim 24 wherein said radial holes have a bottom-end and a top-end, and where said top-end is in advance of said bottom-end in the direction of rotor travel.

28. The fluid heating device according to claim 27 wherein said radial holes have a depth dimension extending the radius dimension of said rotor and interconnect each other forming a continuous pathway in said rotor for the transmission of shock waves.

29. The fluid heating device according to claim 25 wherein said radial holes are disposed in a plurality of circumferential rows spaced about said rotor along the longitudinal axis of said rotor.

30. The fluid heating device according to claim 29 wherein at least one row of said radial holes are circumferentially displaced from any one other row of said radial holes.

31. The fluid heating device according to claim 24 wherein one of said pair of bearings is disposed in each said end portion respectively, a fluid seal disposed in said housing and surrounding said drive shaft and said drive shaft extending past said seal and outwardly from one said end portion for receiving power input.

32. The fluid heating device according to claim 24 wherein said tubular portion comprises a housing sleeve, and where respective end portions comprise rear and front housing covers, said rear and front housing covers each provided with a circular register and said housing sleeve engaging respective registers and clamped between said rear and front housing covers by a plurality of bolts.

33. A method of heating fluids, comprising causing a fluid to enter at least one inlet passage of a device comprising a housing having an internal chamber, a rotor mounted for rotation within said chamber about an axis of rotation, at least one inlet passage and at least one outlet passage formed in said housing, said at least one inlet passage being disposed radially closer to said axis of rotation than said at least one outlet passage, said rotor having an exterior surface defining at least one circumferential row of openings formed over a substantial part of said exterior surface and confronting a cylindrical interior of said housing to define an annular fluid volume, and rotating said rotor with fluid present in said annular fluid volume at sufficiently fast to cause said openings to impart heat-generating cavitation to a fluid within said chamber.

34. The method according to claim 33, wherein said device further comprises radially configured blind holes forming said cavitation-inducing openings longitudinally displaced from said axis of rotation towards the direction of said rotor travel for the amplification of the cavitational effect created by said openings, and wherein said method further comprises causing fluid to be exposed to a greater magnitude of cavitation by said openings to impart an increase in the level of heat-generating cavitation to a fluid entering said chamber.

35. The method according to claim 34, wherein said device further comprises radially configured holes forming said cavitation-inducing openings longitudinally displaced from said axis of rotation towards the direction of said rotor travel and interconnecting each other to form a continuous pathway for the transmission of shock waves in said openings,

and wherein said method further comprising causing fluid to be exposed to a transmission of shock waves in said openings to impart an increase in the level of heat-generating cavitation to a fluid entering said chamber.